DOCUMENT RESUME

ED 285 371 EC 200 460

AUTHOR Workman, Susan; Gage, Jim
TITLE Frontiers of the Mind: Serving Gifted Children in Rural Areas.
PUB DATE Apr 87
NOTE 10p.; Paper presented at the Annual Convention of the Council for Exceptional Children (65th, Chicago, IL, April 20-24, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Cognitive Processes; Curriculum Development; *Disadvantaged Youth; Elementary Education; *Gifted; *Inservice Teacher Education; Institutes (Training Programs); Memory; *Minority Groups; Practicums; *Rural Areas; Semantics; *Summer Programs
IDENTIFIERS Structure of Intellect

ABSTRACT

A summer institute trained 18 teachers to identify and plan curriculum for gifted minority and disadvantaged young children from culturally different and remote rural areas. Theory and practicum emphases were included in the program. Teachers were trained in the Structure of the Intellect (SOI) model. Sixty-eight children from the Alpine (Texas) Independent School District were selected to participate in the 4-week program which would serve as a laboratory for the teachers. During the first 7 days of the institute, the children were tested, individual and group profiles were plotted, and lessons planned to meet individual needs. Teaching teams developed weekly units in which SOI activities were integrated. At the conclusion of 15 half-days of instruction, all 68 children were retested with an SOI instrument. Significant gains were registered in memory and evaluation, figural reasoning and cognition, and semantic processing, and in three of the four processes measured by the reasoning readiness test. Teachers also made significant gains in the figural and symbolic dimensions. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED285371

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Frontiers of the Mind: Serving Gifted Children in Rural Areas

Dr. Susan Workman
Alpine Independent School District
Alpine, TX 79830

Dr. Jim Gage, Dean
Pacific Oaks College
Pasadena, CA 91105

EC 200 460

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Susan Workman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Frontiers of the Mind:
Serving Gifted Children in Rural Areas

> Abraham is a bright, seven year old Hispanic student who lives in a remote area of West Texas. He has been retained in second grade and was referred for special education services. His lack of proficiency in English, coupled with a vision problem (uncorrected Amblyopia- lazy eye) has greatly interfered with his learning to read. Yet Abraham proved to be one of the most creative thinkers in his class; one who frequently offered unique and divergent solutions to problems posed by the teacher. He was not identified for his school's gifted program, however, because his scores on I.Q. and achievement tests were low.

Abraham's plight is not unusual for students from culturally different or low-income backgrounds. The data from several research studies show that the longer children from economically disadvantaged areas are in school the further behind they become in achievement. Average drops of as much as twenty points in measured intelligence have been reported as disadvantaged students move through the grades. "The fact is that, until recently, few gifted students have emerged from this population because no one thought to look" (Clark, p. 333, 1983).

A training model designed to serve young children from economically disadvantaged , culturally different, and remote areas has been developed by Sul Ross State University under the auspices of a grant from the Texas Education Agency. The Frontiers of the Mind Summer Institute was designed to address these problems.

Research on Disadvantaged/Minority Gifted

There are several reasons which help to explain why economically disadvantaged and/or minority children are frequently underserved by gifted and talented programs. The first reason relates to the experiential background of these students. A major factor in the development of giftedness is the provision of stimulating experiences in early childhood (Clark, 1983). This can occur in any cultural or socioeconomic group. Because family interaction patterns in these groups differ, however, traditional measures of identification, which focus on learning experiences typical of middle-class, majority culture homes, may be of limited use.

Language differences also limit identification for and participation in programs for the gifted and talented. Minority students in the west Texas area are primarily Mexican-American, and many enter school with Spanish as their first language. Research in bilingual education indicates, however, that the concepts which children are able to express

in their first language may be social in nature, rather that academic. This makes the transition from first to second language aquisition in a school setting doubly difficult. Few teachers recognize the difficulty of learning academic concepts in an unfamiliar language particularly for students who may not have a high level of proficiency in their first language. Therefore, many of these students are at a distinct disadvantage for selection into G/T programs.

Finally, many of the standardized assessments which are typically used to identify youngsters for gifted/talented programs have been designed to sample a narrow band of academic skills which mesh with the "culture of the school". For many disadvantaged, minority students, the culture of the home differs considerably from the culture of the school. Unfortunately, many programs rely only on traditional I.Q. and achievement measures, thus discriminating against students with non-traditional backgrounds. In reality, 66% of the abilities which are measured by I.Q. tests are also measured on achievement tests. Therefore, it is likely that a child who performs poorly on one of those measures will also have difficulty on the second.

It was our feeling that an assessment measure which sampled a more comprehensive array of abilities would provide a greater opportunity for participation by culturally diverse learners in our gifted/talented program. The Structure of the Intellect Learning Abilities test was chosen both for its focus on thinking abilities and because it indicates patterns of strengths and weaknesses and can be used as a basis for planning programs which meet individual needs.

Summer Institute Design

Teacher Selection

In order for teachers to be included in the summer institute, they had to meet three criteria. First, they had to be assigned to a pre-kindergarten through third grade classroom in a rural district and/or a setting with a high concentration of minority or disadvantaged children. Disadvantaged was defined as eligible for free or reduced price lunch, while minority referred to culturally diverse learners, primarily from first and second generation Mexican-American families. Second, teachers had to be recommended by a district administrator. Third, the applicant's home school district signed a letter of commitment to participate in a pilot implementation phase during the school year which included university supervision, follow-up seminars, and parent involvement.

Teachers filled out an application which reflected their current knowledge of and attitudes toward gifted education, as well as providing demographic information. At the end of this process, eighteen teachers

were selected. Sixteen were from west Texas, while two came from as far as 600 miles away.

Participating teachers had the option of receiving six graduate credit hours or 90 hours of Advanced Academic Training. Tuition and textbooks were paid by the project.

Liason With School Districts

Before the grant was submitted, each district in the Trans-Pecos region was contacted to obtain information regarding needs as well as support for the institute. Each district superintendent and elementary principal was invited to nominate teachers from his or her own program for inclusion in the project. These administrators were responsible for distributing applications to their teachers. An administrator from each district was also responsible for committing the district to participation in follow-through activities during the regular school year.

The local school district, Alpine I.S.D., was involved in a special way. The district agreed to have project staff participate in pre-K and Kindergarten screenings to identify potentially gifted 4-5 year olds. In addition, screening procedures and teacher and parent recommendations were used to select students completing kindergarten, first, and second grades. In this way 68 children became participants in the four week demonstration program which would serve as a laboratory for institute teachers. Of these students, 34 were from culturally different backgrounds and 27 were from low SES homes. The local elementary school served as the site for the program.

Course Format

The teachers' instruction was divided into a three credit hour theory course and a three credit practicum. For seven days before the children arrived, teachers were heavily involved with the learning and instructional model, individually testing child participants, analyzing individual learning profiles, and planning curriculum. Teachers were divided into instructional teams of three teachers for each group of 10-13 children. Two demonstration teachers were selected (one for the three younger groups, one for the older students) and were responsible for the general oversight, scheduling, and daily feedback to teachers.

During the final four weeks of the workshop teachers worked with students for three hours every morning. Opportunities for observation in other groups were provided. Each instructional team was videotaped at least once a week, and guided feedback was provided in the afternoon. Other afternoons were used for planning, case studies, issues seminars and planning for evening parent groups.

Curriculum and Instructional Model

Institute Goals

The summer institute had several specific goals for teacher trainees. First, teachers were to learn to administer, score, and interpret instruments for screening young disadvantaged, minority gifted students. Second, they were to evaluate materials and develop activities appropriate for use with these students. Third, teachers were to demonstrate teaching strategies which afforded young children an opportunity to develop their potential. Fourth, teachers were to practice effective methods for parent training and participation. These goals were addressed in both the theory and practicum components of the institute.

The institute goal for lab school participants was simply that these students would participate in activities designed to enrich their skills in cognition, memory, convergent and divergent thinking, creativity, problem solving and evaluation. Since the demonstration program lasted for only four weeks, no claims of significant gains in test scores were made. The purpose of the lab school was primarily as a training ground for teachers.

Instructional Model

The primary model in which the teachers were trained and which formed the basis for the children's curriculum was the Structure of the Intellect (SOI). The SOI was developed by Mary Meeker and is based on the work of Guilford. The SOI model was selected for several reasons. First, the SOI is based on the thesis that all children have intelligence. "We need to ask 'What kind?' not 'How much?'" (Meeker, 1974). Research indicates that young, disadvantaged Mexican American students may be gifted in memory and figural abilities (Meeker,M. and Meeker,R., 1973). Superior abilities in these areas might go undetected as giftedness on I.Q. measures. Since 22 of the 26 SOI-LA subtests are tests of thinking abilities (process) rather than knowledge (content) as in I.Q. and achievement tests, gifted culturally and socioeconomically diverse students can be more easily identified (Meeker, 1985).

Second, the SOI has been proven effective in prescribing curricula for disadvantaged and culturally different students, as well as with the gifted. One hour of SOI training per week, over a three year period resulted in significant gains in all SOI dimensions for 70 gifted Mexican American students in grades one through six (Meeker, 1985). Significant improvements have been found for other groups of disadvantaged Mexican American students. Significant improvements have been found in classification, evaluation, and figural abilities. Training in SOI abilities has been shown to carry over in gains in arithmetic and reading achievement for these students (Meeker, 1985).

The third reason the SOI was chosen is that, although the model is both

elegant and complex, it provides teachers with all of the necessary materials for identification, diagnosis of strengths and weaknesses, planning, and evaluation. The basic abilities which make up intelligence are trained, using a strategy whereby areas of strength are used to develop areas which are less strong. This process approach can easily be integrated into any content area. In this way, SOI activities can be used within the regular classroom, as well as in G/T programs, to meet the special needs of gifted students.

During the first seven days of the institute teachers were immersed in the theory and practice of the SOI model. Lab school children were tested, individual and group profiles were plotted and lessons were planned to meet individual needs. An overall theme of "Explorations" allowed each teaching team to develop weekly units on themes related to the topic (such as prehistoric Texas, using your senses, and "me") as content areas in which SOI activities were integrated (See Figure I). On a daily basis, each team planned for and implemented learning centers, group activities, computer experiences, and perceptual motor training using materials and activities developed by Frank Belgau (Belgau, 1983) which related to the SOI model. In this way teachers translated theory into practice for three ours a day over a four week period. Afternoons were devoted to videotape feedback sessions, planning for weekly parent meetings, "issues" seminars, and planning time.

Results

At the end of fifteen half-days of instruction, all 68 youngsters were retested with the appropriate SOI instrument.

Table I presents the pre/post dimension and process mean scores for the Reasoning Readiness Test group. A one-way analysis of variance (F) and probability for each area and process is also indicated. Gains were significant at .05 level of confidence in Memory and Evaluation; at the .01 level in Figural and Cognition; and at the .001 level in Semantic processing. Significant gains resulted in two of the three dimensions: Figural and Semantic; and in three of the four processes measured by the Reasoning Readiness Test.

Table I
Reasoning Readiness: Pre/Post Scores
Analysis of Variance by SOI Dimension and Process Cluster

Dimension Process	Mean Pretest	Post-test	F Test	p
Figural	31.86	39.17	10.74	.002
Symbolic	10.28	11.31	1.02	.320
Semantic	22.53	25.47	11.01	.001
Memory	4.86	6.89	4.69	.040
Cognition	36.44	41.36	8.84	.003
Convergent	16.17	18.86	2.84	.120
Evaluation	7.19	8.64	6.81	.020

(n=36)

Pre/Post scores of the older group of children (entering grades 2 and 3) are presented in Table II. Similarly, means for the SOI Learning Abilities Test, Form P dimensions and processes are reported. For the older groups significant gains were noted in the Figural and Symbolic dimensions as

Table II
Learning Abilities Form P: Pre/Post Scores
Analysis of Variance by SOI Dimensions and Process Clusters

Dimension	Mean			
Process	Pretest	Post-test	F Score	p
Figural	50.56	59.55	11.14	.001
Symbolic	89.31	111.50	4.48	.040
Semantic	35.00	38.26	3.61	.080
Memory	23.09	23.29	1.28	.260
Cognition	51.47	57.42	5.76	.020
Convergent	87.91	112.23	5.79	.020
Evaluation	12.69	13.61	1.47	.230

(n=32)

well as in the Cognition and Convergent process clusters. Given the short span of the program (19 days), and the demonstrated significance in two of the three dimensions (Figural and Semantic for the younger group and Figural and Symbolic for the older group) it is evident that SOI activities can make noticeable differences in the performance of potenially gifted young children. Both groups also evidenced significant gains in process clusters: the younger group showed significcant changes in Memory, Cognition, and Evaluation while the older group had signifiant gains in Cognition and Convergent process clusters.

Another important component of the summer institute was the teacher training model: a concurrent instruction and implementation program or the 18 teacher interns who represented 12 different Texas school districts. Their pre/post scores are presented in Table III. Teacher scores reflected significant differences in all three dimensions with the highest levels of significance occuring in the Figural (.001) and Symbolic (.001) dimensions.

Table III
SOI Learning Abilities Test: Pre/Post Scores for Teacher Group

Dimension	Mean			
	Pretest	Post-test	t test	p
Figural	159.222	208.353	7.23	.001
Symbolic	346.833	423.611	3.96	.001
Semantic	166.056	178.722	2.60	.020
		(n=18)		

Implementation and Networking

A critical phase of the Frontiers of the Mind Institute was the implementation of the model in the institute teachers' home schools. Teachers are often "stonewalled" by peers and administrators when attempting to bring about change in curricular design or instructional strategies. Anticipating this, the project elicted a commitment from each institute teacher's home district to allow implementation in his or her school. Additionally, project staff have made periodic visits to each teacher's school district for the purpose of providing training to other teachers, informing administrators and parents, and offering technical assistance to the institute teachers.

A support network has also been arranged which brings the institute teachers together during each semester for idea and information sharing, for offering and receiving mutual support, and for socialization. All materials necessary for implementation were provided to teachers during the summer institute. In addition, instructional units were replicated and distributed. The network meetings allow for further sharing of materials as well as for revising and updating of existing materials.

The classroom teacher's role is often characterized by isolation from other adults. Teaching in remote or rural areas often compounds the problem. "Frontiers" demonstrated that, when provided with training and experience using an appropriate model and a support network with regular opportunities for interaction, teachers can grow and can more easily provide growth experiences for young, atypical gifted students.